APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,527	04/02/2001	Kirk Johnson	2762.2006-002	1065

21005   7590   02/26/2007
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER
AVELLINO, JOSEPH E

ART UNIT	PAPER NUMBER
2143	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.
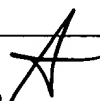
-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *16 January 2007*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-51 and 61-89* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-51 and 61-89* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some *   c) ☐ None of:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____.

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-51,and 61-83 are pending; claims 1, 19, 35, 40, 45, and 47 are

independent. The Office acknowledges the addition of claims 84-89.

Claim Rejections - 35 USC § 103

2.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

        Claims 1-7, 11-16, 18-24, 28-30, 32, 33, 35, 36, 38, 39-41, 43-48, 50, 51, 62, 64,

66, 68, 70, 72, 74-79, and 84-89 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Primak et al. (Pub. No. 2001/0039585) (hereinafter Primak) in view of

Logan et al. (USPN 6,578,066) (hereinafter Logan).

3.   Referring to claim 1, Primak discloses a system for optimizing server selection for

clients from among a plurality of servers in a packet communication network (Figure 1;

abstract), the system comprising:

        a plurality of servers for alternatively responding to client requests (Figure 1,

reference characters 30a-e);

        a central server (DNS server) that maintains server selection weights (i.e.

capacity information), and, based on the weights, provides in response to a client

request (i.e. *on receipt of a client query*), a candidate server list (i.e. either all or a

subset of DNS agents on the server cluster zones for which the DNS server 10 has

received server selection weight information) for responding to a client request to a network node (i.e. the DNS server) adapted to interrogate (i.e. ping as stated by Applicant on page 8 of the disclosure) the individual servers represented in the candidate server list by issuing probes to the individual servers and receiving responses to the probes (i.e. ping responses), the central server receiving feedback (i.e. measurement statistics) indicating service by individual servers in response to client requests and modifying the server selection weights based on the feedback (Figure 1; abstract; p. 2, ¶ 25; p. 3, ¶ 31). Primak furthermore discloses comprising a DNS server 10 which receives the client request from the client (p. 2, ¶ 25); and based on the client requests, forwards the client requests to the central server (since the central server is part of the DNS server, it inherently forwards this request to the server when a resolution is to be made based on the server cluster.

Primak does not specifically returning a candidate list of at least two candidate servers back to a DNS from the central server. In analogous art, Logan discloses another address resolution system which discloses in response to a name server resolution request, candidate server list is returned (i.e. "ordered list") from a central server (i.e. network switch) to a DNS (i.e. client's domain name server), based on the locality of the client's IP address and the Source DNS IP address (e.g. abstract; col. 10, lines 5-55). It would have been obvious to one of ordinary skill in the art for the DNS server of Primak to utilize the "ordered list" returned by the network switch of Logan in order to provide the network switch the ability to direct the client's service to a particular

geographic site, thereby saving bandwidth and reducing unnecessary delays relative to the client as supported by Logan (col. 9, line 62 to col. 10, line 5).

4.   Claim 2 is rejected for similar reasons as stated above.

5.   Referring to claim 3, Primak discloses the invention substantively as described in claim 2. Primak further discloses interrogating candidate servers in the candidate server list (p. 2, ¶ 25).

6.   Referring to claim 4, Primak discloses the invention substantively as described in claim 3. Primak further discloses selecting a candidate server based on the interrogation (p. 3, ¶ 31).

7.   Referring to claim 5, Primak discloses the invention substantively as described in claim 4. Primak further discloses indicating to the selected candidate server that it has been selected to provide service to the requesting client (it is inherent that when the client sends its request to the selected candidate server via a redirection packet, the server will know that it has been selected to provide service to the requesting client, since the only way for the client to be serviced by the particular server in the cluster is to request the address from the DNS server) (p. 3, ¶ 31).

8.   Referring to claim 6, Primak discloses the invention substantively as described in claim 3. Primak further discloses the DNS server returns to the requesting client the address of the first server to respond to the interrogation (Primak uses this term as the "shortest RTT" or Round Trip Time; since all interrogation requests are sent virtually simultaneously, it would be deduced that the server with the lowest RTT would be the first server to respond to the interrogation) (p. 3, ¶ 29).

9.   Claim 7 is rejected for similar reasons as stated above.

10.   Referring to claim 11, Primak discloses each candidate server in the candidate server list is unique from each other candidate server in the list (i.e. there are no duplicate servers returned to the client, merely only ones which are above threshold) (Figure 1; p. 2, ¶ 23; p. 3, ¶ 31).

11.   Referring to claim 12, Primak discloses the feedback occurs at a requested event (i.e. when requested to by the DNS server) (p. 3, ¶ 27-29).

12.   Referring to claim 13, Primak discloses the weights are based on a bias factors to reduce convergence time, the bias factors including geographical location (Primak discloses returning the server with the shortest RTT, or round trip time, the server geographically closest to the client will have the higher RTT, and thereby be biased towards that particular server in the weighting of the servers) (p. 2, ¶ 29).

13.   Referring to claim 14, Primak discloses the invention substantively as described

in claim 1, however does not specifically state the weights sum to one, however it is well

known that many routing systems utilize a percentage system allocating x percent to a

particular server, y percent to another server, etc. These percentages result in a totality

of 100 percent, which equals one. By this rationale, "Official Notice" is taken that

providing the weights sum to one is well known and expected in the art. It would have

been obvious to one of ordinary skill in the art to modify the teaching of Primak to

include the weights summing to one in order to reduce complexity of the system.

14.   Referring to claim 15, Primak discloses the invention substantively as described

in claim 1. Primak does not disclose the central server includes vectors of server

selection weights for subsets of clients. However, it is common knowledge that a DNS

server caches certain aspects of a client's session with a server (i.e. maintains state

information and would be able to redirect to an appropriate server if the client has an

affinity towards that particular machine, either geographical or security). Taken in

context with the invention disclosed in Primak, it would have been obvious to one of

ordinary skill in the art to include caching weights of servers for particular clients for

faster redirection and less transactional overhead.

15.   Referring to claim 16, Primak discloses the central server includes multiple

central servers organized as a distributed system (p. 2, ¶ 25).

16.   Referring to claim 18, Primak discloses the candidates represented in the

candidate server list are pseudo-randomly selected based on the weights (they are

based on feedback received from the servers, which factor upon the current loads of the

servers, thereby providing a randomness to the selection factor, there is no actual

scheme, such as round-robin, to select the next server, thereby it is considered a

pseudo-random selection) (e.g. abstract).

17.   Claims 19-24, 28-30, 32, 33, 35, 36, 38, 39-41, 43-48, 50, 51, 62, 64, 66, 68, 70,

72, 74-79, and 84-89 are rejected for similar reasons as stated above. Furthermore

Primak discloses the servers include multiple servers organized as a distributed system

(i.e. server clusters) (Figure 1). Primak discloses the DNS interrogating the candidate

servers to measure server capacity information (i.e. server congestion) (p. 2, ¶ 23).

Primak does not specifically disclose that the weights sum to one, however this is

supplied in Logan (Table V, col. 9: "traffic dist" used as percentages). Primak

furthermore discloses the network node (i.e. DNS server) choosing the server from the

candidate server list based on probes (i.e. see rejection above).

        Claims 17, 34, and 80 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Primak in view of Logan in view of Meek et al. (USPN 6,539,426)

(hereinafter Meek).

18.   Referring to claim 17, Primak in view of Logan discloses the invention

substantively as described in claim 1. Primak in view of Logan does not disclose the

client interrogates the candidate servers in the list to measure network performance.

Meek discloses another load balancing method wherein client interrogates the

candidate servers in the list to measure network performance (col. 10, lines 6-27). It

would be obvious to a person of ordinary skill in the art at the time the invention was

made to combine the teaching of Meek with Primak to adequately provide business

applications programs that are distributed amongst the servers in the network providing

redundancy and increased application usage as supported by Meek (col. 1, lines 45-

50).

19.   Claims 34 and 80 are rejected for similar reasons as stated above.

        Claims 8-10, 25-27, 37, 42, 49, 73, and 81-83 are rejected under 35 U.S.C.

103(a) as being unpatentable over Primak in view of Logan in view of Guenthner et al.

(USPN 6,134,588) (hereinafter Guenthner).

20.   Referring to claim 8, Primak in view of Logan discloses the invention

substantively as described in claim 1. Primak in view of Logan does not disclose the

candidate server list includes extra, randomly selected, candidate servers beyond the

candidate servers selected based on the weights. In analogous art, Guenthner

discloses another server load balancing method wherein the candidate server list

includes extra, randomly selected, candidate servers beyond the candidate servers selected based on the weights (e.g. abstract; Figure 8; col. 8, lines 25-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Guenthner with Primak to provide a client-side solution to ensure availability of Web services to a Web browser as supported by Guenthner (col. 1, lines 65-67).

21.   Referring to claims 9 and 10, Primak in view of Logan discloses the invention substantively as described in claim 1. Primak in view of Logan does not disclose the randomly selected candidate servers are a fixed number/percentage (a percentage is a number) beyond the number of servers selected based on the weights. Guenthner discloses including randomly selected servers based on the weighting (e.g. abstract; Figure 8; col. 8, lines 25-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Guenthner with Primak to provide a client-side solution to ensure availability of Web services to a Web browser as supported by Guenthner (col. 1, lines 65-67).

22.   Claims 25-27, 37, 42, 49, 73, and 81-83 are rejected for similar reasons as stated above.

Claims 61, 63, 65, 67, 69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primak in view of Logan in view of Lin (USPN 6,298,451).

23.   Referring to claim 61, Primak in view of Logan discloses the invention

substantively as described in claim 1. Primak in view of Logan does not specifically

disclose the client is the node adapted to interrogate individual servers. In analogous

art, Lin discloses another system for optimizing server selection which discloses a client

interrogating servers from a candidate server list (col. 5, lines 7-19; col. 6, lines 15-39).

It would have been obvious to one of ordinary skill in the art to combine the teaching of

Lin with Primak in order to reduce the load off of the DNS server of Primak in order to

allow the client, which is less loaded than a DNS server, the task of determining if a

candidate server is available, thereby reducing overhead transactions on the DNS

server, thereby allowing more efficient processing of incoming DNS requests.

24.   Claims 63, 65, 67, 69, and 71 are rejected for similar reasons as stated above.

Response to Arguments

25.   Applicant's arguments filed January 16, 2007 have been fully considered but they

are not persuasive.

26.   In the remarks, Applicant argues, in substance, that (1) Primak does not

interrogate servers represented in the candidate server list.

27.   As to point (1), Applicants attention is directed to p. 2, ¶ 25 of Primak which

disclsoes that when a request is received, the DNS server sends a pinging request or

DNS query to the DNS agents 32 on each of the server clusters. When taken in context

of Primak in view of Logan, this clearly demonstrates the probing of the servers on the

basis of a candidate server list. By this rationale, the rejection is maintained.

Conclusion

28.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

29.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

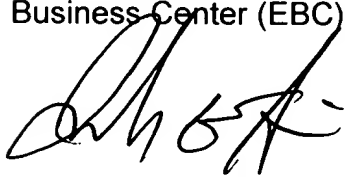policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

30.   Applicant has failed to seasonably challenge the Examiner's assertions of well

known subject matter in the previous Office action(s) pursuant to the requirements set

forth under MPEP §2144.03. A "seasonable challenge" is an explicit demand for

evidence set forth by Applicant in the next response. Accordingly, the claim limitations

the Examiner considered as "well known" in the first Office action, are now established

as admitted prior art of record for the course of the prosecution. See In re Chevenard,

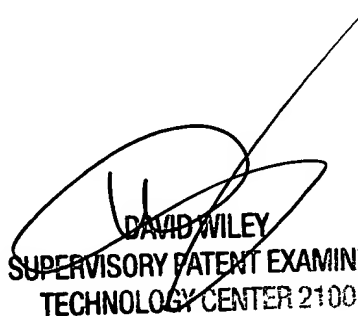139 F.2d 71, 60 USPQ 239 (CCPA 1943).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph E. Avellino whose telephone number is (571)

272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Joseph E. Avellino, Examiner
January 26, 2007

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100